

1 I claim:

2 1. A process for utilizing a commercially available condensation polymer, without  
3 degradation, to modify a modifying polymer to a higher molecular weight final  
4 polymer, said process comprising the steps of first synthesizing a modifying polymer  
5 from a plurality of monomers and second transesterifying the modifying polymer  
6 with said commercially available condensation polymer at a quantity predetermined  
7 by the end use application to produce said higher molecular weight final polymer.

8

9 2. The process of Claim 1 wherein said commercially available condensation  
10 polymer is polyethylene terephthalate.

11

12 3. The process of Claim 1 wherein said commercially available condensation  
13 polymer is polyethylene naphthalate.

14

15 4. The process of Claim 1 wherein said higher molecular weight final polymer is a  
16 polyol.

17

18 5. The process of claim 1 wherein said higher molecular weight final can be used as  
19 a hot melt adhesive.

20

21 6. The process of claim 1 wherein said higher molecular weight final polymer can be

1 used as a film forming coating.

2  
3 7. The process of claim 1 wherein said higher molecular weight final polymer can be  
4 used as a powder coating resin or component of a fusible coating system.

5  
6 8. The process of Claim 1 wherein said higher molecular weight final polymer can  
7 be used as a flexible film.

8  
9 9. The process of Claim 1 wherein said higher molecular weight polymer can used  
10 as an unsaturated resin for casting.

11  
12 10. The process of Claim 3 further comprising the step of reacting said polyol with  
13 an isocyanate to produce a polyurethane.

14  
15 11. A process for utilizing a commercially available condensation polymer, without  
16 degradation, to modify a modifying polymer to a higher molecular weight final  
17 polymer, said final polymer having a molecular weight greater than 192 g/mol, said  
18 process comprising the steps of first synthesizing a modifying polymer from a  
19 plurality of monomers, said first synthesizing step occurring at a reaction time of  
20 about 1 hour to about 5 hours and at a temperature of about 150 degrees  
21 Centigrade to about 270 degrees Centigrade, and second transesterifying the

1 modifying polymer with said commercially available condensation polymer at a  
2 quantity predetermined by the end use application, said second transesterifying step  
3 occurring at a reaction time of less than about 3 hours and at a temperature of  
4 about 200 degrees Centigrade to about 290 degrees Centigrade to produce said  
5 higher molecular weight final polymer.

6  
7 12. The process of Claim 11 wherein said commercially available condensation  
8 polymer is polyethylene terephthalate.

9  
10 13. The process of Claim 11 wherein said commercially available condensation  
11 polymer is polyethylene naphthalate.

12  
13 14. The process of Claim 11 wherein said higher molecular weight final polymer is a  
14 polyol.

15  
16 15. The process of claim 11 wherein said higher molecular weight final can be used  
17 as a hot melt adhesive.

18  
19 16. The process of claim 11 wherein said higher molecular weight final polymer can  
20 be used as a film forming coating.

- 1 17. The process of claim 11 wherein said higher molecular weight final polymer can  
2 be used as a powder coating resin or component of a fusible coating system.  
3
- 4 18. The process of Claim 11 wherein said higher molecular weight final polymer can  
5 be used as a flexible film.  
6
- 7 19. The process of Claim 11 wherein said higher molecular weight polymer can  
8 used as an unsaturated resin for casting.  
9
- 10 20. The process of Claim 13 further comprising the step of reacting said polyol with  
11 an isocyanate to produce a polyurethane.